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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,651	05/23/2005	Ulrich Ising	H01.2-11703	2284
490	7590	02/07/2007	EXAMINER	
VIDAS, ARRETT & STEINKRAUS, P.A. 6109 BLUE CIRCLE DRIVE SUITE 2000 MINNETONKA, MN 55343-9185			SHAKERI, HADI	
		ART UNIT		PAPER NUMBER
				3723

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/511,651	ISING ET AL.	
	Examiner	Art Unit	
	Hadi Shakeri	3723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 11-24 and 26-30 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-7, 10, 25, 31 and 35-38 is/are rejected.
- 7) Claim(s) 8, 9 and 32 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 18 October 2004 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>20041126</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1-10, 25, 31, 32 and 34-38 in the reply filed on December 13, 2006 is acknowledged.

Drawings

2. The drawings are objected to because in Fig. 3, the hand written reference character (108) should be corrected. Further drawings fail to meet the requirements for 37 CFR 1.84(l). Lines, numbers and letters are not uniformly thick and well defined, clean and durable, and black (poor line quality). It is also noted that figures should be labeled separately, i.e., Fig. 10a... Specification should also be amended to correspond to the new numbering of the drawings, if applicable.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because undue length. Abstract should also be directed to the embodiment claimed. Correction is required. See MPEP § 608.01(b).

Claim Objections

5. Claims 25-38 are objected to because of the following informalities: claim 25 recites for a device for the CMP of the surface of circular, flat workpieces, in particular semiconductor wafers, rendering the claim objectionable and similarly for claim 25, "in particular silicon wafers in a sealed clean room". The preamble should be changed to delete ", in particular semiconductor wafers". In claim 32, "for flat circular workpieces", in line 2, should be deleted, or positively recited. It also appears that in claim 3, "cleaned and dried workpieces" should be changed to, -- washed and dried workpieces--, as described in paragraph 83.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-10, and 25, 31, 32, 34, 38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 1 recites the broad recitation method for transporting, chemical-mechanical polishing and drying of workpieces, and the claim also recites in particular silicon wafers in a sealed clean room, which is the narrower statement of the range/limitation.

9. Regarding claims 1 and 25, the language as recited in line 3, i.e., "at least one transfer device", to transfer the wafers from loading/unloading station (102) to the intermediate station (12) renders the claim indefinite, since specification as originally filed discloses robots (108) and (118) to transfer the wafer in two stages to the intermediate station, and the specification also, in describing Figs. 10a-10o, describes a transfer station (38) not shown, it is unclear which device is being claimed. It is also noted that providing one robot (the "at least one" embodiments) to perform the tasks of robots (108) and (118), lacks sufficient support in the specification as

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originally filed for enablement, since the apparatus has to be reconfigured to enable one such robot.

10. Regarding claim 1, the language as recited in line 5, i.e., "at least one polishing head of a polishing device of the intermediate station", renders the claim indefinite, since the polishing heads (134, 136, 138 and 140) are not of the intermediate station, rather polishing plates (130 and 132).

11. Regarding claim 2, "a" loading and unloading station, should be changed to,--the--, -- said--, since it refers back to the one recited/claimed in the parent claim 1.

12. The step before the last in claim 1 renders the scope unascertainable for the embodiments wherein the cleaned and/or chemically treated workpieces are optionally transported to a second polishing device and not to the washing or drying device, as recited in the preceding step.

13. Claim 5 recites the limitations "the gripping means" in line 2. There is insufficient antecedent basis for this limitation in the claim.

14. Claim 7 recites the limitations "the gripping means" in line 2. There is insufficient antecedent basis for this limitation in the claim.

15. Claim 20 recites the limitations "the centering means" in line 2. There is insufficient antecedent basis for this limitation in the claim.

16. Claim 33 recites the limitations "the shafts" and "the housing" in line 2. There are insufficient antecedent bases for these limitations in the claim.

Claim Rejections - 35 USC § 102

17. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

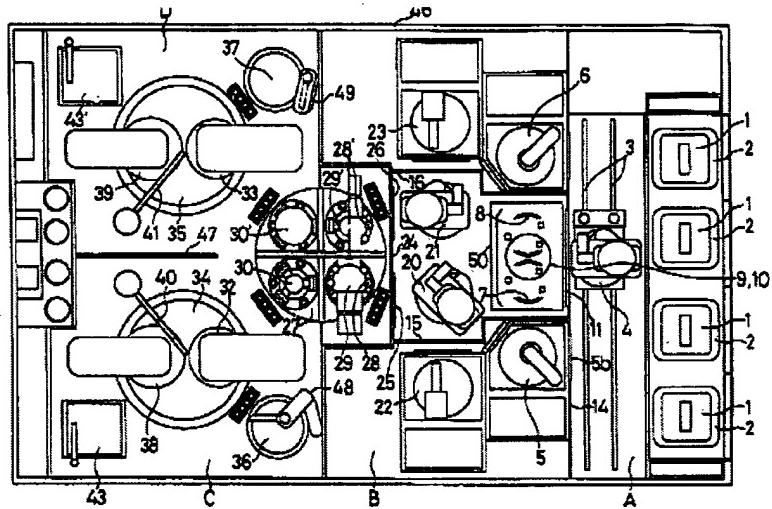
A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

18. Claims 1-7, 10, 25, and 34-38 are rejected under 35 U.S.C. 102(e) as being anticipated by Sakurai et al., US Patent No. 6,354,922.

Sakurai et al discloses all of the limitations of claims 1 and 25, i.e., transfer device (4, 20) for removing wafers from a loading and unloading station (1) into an intermediate station (27); polishing head (32) transporting the wafer to a polishing plate (e.g., 35) for



polishing; cleaning or chemically treating the wafer in the intermediate station after polishing and then transferred optionally to a second polishing device (e.g., 37) or to a wash or drying station (e.g., 21, or 50 and spin dry), sensor (71); the apparatus further including a dresser (38) which may be cleaned by spray nozzle (paragraph 170) having a brush and tank (43).

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the

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various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

20. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakurai et al.

Sakurai et al meets all the limitations of the above claim except for disclosing exchangeable polishing heads. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the top ring separable, e.g., to adapt the apparatus for different size top ring for supporting correspondingly sized workpieces, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179, and since it has been held that changing shape, dependent on work-piece parameters, involves only routine skill in the art. *In re Stevens*, 101 US PQ 284(CCPA1954).

Allowable Subject Matter

21. Claims 8, 9 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

22. The following is a statement of reasons for the indication of allowable subject matter: although endpoint detection systems are known, modifying the prior art to obtain a method meeting the limitations as recited in claim 8, appears hindsight, similarly although the gripping means of the prior art (e.g., 28 or edge supporting robot 4) are designed to grip the workpiece at the edge, the recitation of parallel rigid shafts rotatably mounted in a housing further comprising gripping jaws as recited in claim 34, places this claim allowable over prior art.

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Conclusion

23. Prior art made of record and not relied upon at this time, are considered pertinent to applicant's disclosure. Hayashi et al., Sakurai et al., Jackson et al., Izumi, Morsch et al., Greene et al., and Gill, Jr. are cited to show related inventions.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hadi Shakeri whose telephone number is (571) 272-4495. The examiner can normally be reached on Monday-Friday.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hadi Shakeri
Primary Examiner
Art Unit 3723
February 5, 2007